

## Claims

What is claimed is:

1. A method of operating a communication system having a session manager and network elements to provide telephony service to a user having a communication hub and an analog telephone wherein the communication hub is configured to interwork between the analog telephone and a digital communication link, the method comprising:

transferring a software agent to the communication hub wherein the software agent is operational when executed by the communication hub to manage off-hook detection, dial-tone generation, called number digit collection, and ring-back generation for the analog telephone to establish a telephone call, and to exchange control messages with the session manager to establish the telephone call;

in the session manager, exchanging the control messages with the software agent in the communication hub, and in response, controlling the network elements to establish the telephone call; and

in the network elements, providing a digital communication service for the telephone call over the digital communication link in response to the session manager control.

2. The method of claim 1 wherein transferring the software agent to the communication hub comprises downloading the software agent from a server over the Internet.

3. The method of claim 1 wherein providing the digital communication service over the digital communication link comprises providing Asynchronous Transfer Mode service

4. The method of claim 1 wherein providing the digital communication service over the digital communication link comprises providing Digital Subscriber Line service.

5. The method of claim 1 wherein providing the digital communication service over the digital communication link comprises providing Internet Protocol service.

6. The method of claim 1 wherein providing the digital communication service over the digital communication link comprises providing Synchronous Optical Network service.

7. The method of claim 1 wherein the software agent is configured to manage call waiting.

8. The method of claim 1 wherein the software agent is configured to manage voice mail.

9. The method of claim 1 wherein the software agent is configured to manage call blocking.

10. The method of claim 1 wherein the software agent is configured to manage call routing to the analog telephone.

11. The method of claim 1 wherein the software agent is configured to exchange control messages with an application programming interface for a telephony card in the communication hub.

12. The method of claim 11 wherein the control messages comprise start ring, stop ring, start tone, stop tone, open voice channel, and close voice channel.

13. A communication system to provide telephony service to a user having a communication hub and an analog telephone wherein the communication hub is configured to interwork between the analog telephone and a digital communication link, the communication system comprising:

a server configured to transfer a software agent to the communication hub wherein the software agent is operational when executed by the communication hub to manage off-hook detection, dial-tone generation, called number digit collection, and ring-back generation for the analog telephone to establish a telephone call, and to exchange control messages to establish the telephone call;

a session manager configured to exchange the control messages with the software agent in the communication hub, and in response, to control the communication system to establish the telephone call; and

network elements configured to provide a digital communication service for the telephone call over the digital communication link in response to the session manager control.

14. The communication system of claim 13 wherein the server is configured to download the software agent to the communication hub over the Internet.

15. The communication system of claim 13 wherein the network elements are configured to provide Asynchronous Transfer Mode service over the digital communication link.

16. The communication system of claim 13 wherein the network elements are configured to provide Digital Subscriber Line service over the digital communication link.

17. The communication system of claim 13 wherein the network elements are configured to provide Internet Protocol service over the digital communication link.

18. The communication system of claim 13 wherein the network elements are configured to provide Synchronous Optical Network service over the digital communication link.

19. The communication system of claim 13 wherein the software agent is configured to manage call waiting.

20. The communication system of claim 13 wherein the software agent is configured to manage voice mail.

21. The communication system of claim 13 wherein the software agent is configured to manage call blocking.

22. The communication system of claim 13 wherein the software agent is configured to manage call routing to the analog telephone.

23. The communication system of claim 13 wherein the software agent is configured to exchange control messages with an application programming interface for a telephony card in the communication hub.

24. The communication system of claim 23 wherein the control messages comprise start ring, stop ring, start tone, stop tone, open voice channel, and close voice channel.